

Conch. Icon., *Pectunculus*, pl. 6. f. 35.

Hab. Australia.

The valves of this shell are entirely covered with beautiful thread-like ribs, and the interstices are filled with fine roots of epidermis, arranged in from three to four rows.

Mr. Gould read a paper on the habits of *Leipoa*, drawn up from accounts which he had recently received from His Excellency G. Grey, Governor of South Australia, and Mr. Gilbert. The notes of these two careful observers, though made in distant parts of Australia, were confirmatory in all essential particulars of the account of the habits of this curious bird as published by Mr. Gould in his work on the Birds of Australia. The notes moreover contained various interesting additional facts, and were illustrated by sectional drawings of the mound constructed for the deposit of the eggs.

Mr. Gould then called attention to a new species of Kangaroo-rat, which he exhibited, and thus characterizes:—

BETTONGIA CAMPESTRIS. *Bett. vellere longo, molli; corpore suprâ fusco, albo-penicillato, subtus sordidè albo; auribus mediocribus intus pilis sordidè albis, subflavescentibus tinctis; tarsi longi, graciles, pilis pallidis, flavescenti-lavatis; caudâ longâ (capite corporeque ferè æquante) plerumque pilis brevibus, adpressis, pallidè rufo-flavescentibus vestitâ, subtus et ad apicem pallidiore.*

	unc.	lin.
Longitudo ab apice rostri ad caudæ basin....	15	9
————— ad basin auris	2	8
————— <i>auris</i>	1	1
————— <i>caudæ</i>	14	0
————— <i>tarsi digitorumque</i>	4	10

Hab. South Australia.

In the texture and colouring of the fur this little animal greatly resembles the common European Hare. The under-fur is dense, long and soft; grey next the skin, and sooty brown externally; but this last colour is confined to the tip of each hair, there being a considerable space between the grey and brown portions, which is of a very pale yellowish brown: interspersed with the under-fur (especially on the back) is an abundance of very long and harsher hairs, the visible portion of which is of a brownish white colour, except the extreme point of each hair, which is blackish. The sides of the body are of a pale dirty yellowish tint, and the under parts are dirty white. The feet and tail are of an uniform very pale yellowish brown. The ears are short and rounded, but with the apical portion slightly contracted in width; they are well-clothed with pale dirty yellowish hairs, except on the fore-part of the outer side, where there is an admixture of deep brown hairs.

The following "Notices of Fishes newly observed or discovered in Madeira during the years 1840, 1841, and 1842," by the Rev. R. T. Lowe, M.A., Corresponding Member of the Zoological Society, were communicated to the Meeting.

Family Scombridae.

Genus SERIOLA, Cuv. and Val.

SERIOLA GRACILIS. *Ser. elongata, fusiformis; capite cubico, lateribus declivibus planis, oculis magnis: pinna dorsali prima triangulari, secunda altiore; secundæ analisque (antice elevatis) radiis posterioribus subproductis, in pinnulas subsecudentibus; pectoralibus lanceolatis elongatis, capite longioribus; ventralibus mediocribus.*

1^{ma} D. 9; 2^{da} D. 3 + 20; A. 3 + 20; P. 24; V. 1 + 5; C. $\frac{4+IX.}{4+VIII.}$;

M. B. 6. Squamæ lin. lat. 60.

A single individual of this species has occurred, said to have been thrown up in a gale. It measured six inches and three quarters in length. Its nearest ally is *S. bipinnulata* (Quoy et Gaim.), Jen. in Darw. Fish. p. 72. Like that species, it has no spine inclining forwards before the dorsal, nor any free spines before the anal fin; but in the more complete connection and regularity of the hinder rays of the second dorsal and of the anal fins, it possesses a degree more of the typical Serioline character than that species. Still it is not unlikely that a comparison of the two fishes may warrant, on some future occasion, their separation from *Seriola* into a genus, which may be called *Cubiceps*.

The lower jaw shuts within the upper, like a box-lid; forcibly reminding the observer of *Tetragonurus*, for a battered or bleached state of which fish this example might have been easily mistaken.

The colour was an uniform pale dull grey, with the fins and towards the back darker and brownish.

Fam. CORYPHÆNIDÆ.

BRAMA LONGIPINNIS. *B. corpore abbreviato alto: squamis postice caudam versus antrorsum aculeato-umbonatis; pinna dorsali analique antice longe falcato-productis.*

D. 4 + 31; A. 2 + 26; P. 20; V. 1 + 5; C. $\frac{4+IX.}{4+VIII.}$; M. B. 7;

Sq. lin. lat. 41-45.

Though founded upon a single individual, this appears a truly distinct species in the above characters from *B. Raii*, Bl., of which it presents the general appearance, colour and habit. The example seen measured eighteen inches and a quarter in length, and was eight inches deep at the origin of the dorsal and anal fins. As settling, by its partially aculeate scales, the true position of *Taractes*, this fish has been a very valuable acquisition.

Gen. TARACTES, nob.

Char. Gen.—*Corpus ovatum compressum (ad finem pinnæ dorsalis analisque abrupte in caudam contractum), squamis cycloideis retrorsum aculeato-umbonatis muricato-asperum. Caput squamosum; oculis magnis; rostro brevissimo simo; rictu magno sub-*

verticali; dentibus *Bramæ* similibus subscobinatis recurvis, externis majoribus; palatinis vomereque armatis. *Operculum* simplex inerme. *Præoperculum* basi eximie dentato s. subcalcarato; suboperculo interoperculoque denticulatis.

Pinnae malacopterygiæ, s. omnes radiis mollibus. *Ventrales* subjugulares. *Pinna dorsalis* analisque unica conformis lata: *caudalis* simplex integra rotundata. *Membrana branchiostega* septem-radiata.

Squamæ magnæ trapeziformes postice emarginatæ cycloideæ; umbone in aculeum recurvato-erectum producto.

TARACTES ASPER.

D. 5 + 28; A. 3 + 20; P. 17; V. 1 + 5; C. $\frac{4+VIII.}{3+VII.}$; M. B. 7;

Squamæ corporis in serie longitudinali 43 fere.

The generic name imposed at its first discovery on this particularly interesting, though plain and sober-coloured little fish, expresses the difficulty experienced in settling its relations of affinity, which are indeed so obscure and complicated, that but for the subsequent discovery of *Brama longipinnis*, with its similarly, though contrariwise, hooked scales, its true position, next to *Brama*, with analogies to many other families (e. g. *Zenidæ*, *Caproidæ*, *Scombridæ*), must have remained in abeyance.

PTERACLIS PAPILIO. *P. longitudine altitudinem plus quater multiplicatam æquante: pinna dorsali prima analique cæruleo-violuceis, lituris inter radios aureo-viridibus postice biseriatis; hac radio secundo, illa quarto validiore, ceteris capillaceis flexuosis.*

1^{ma} D. 35; 2^{da} D. 6; A. 35; P. 18; V. 6; C. $\frac{3+I.+VIII.}{3+I.+VII.}$.

Nothing can exceed the splendour of the deep violet-blue, with the gold and green iridescent dashes or short stripes between the rays of the first dorsal and the anal fins. It resembles the breast of certain Humming-birds, and contrasts singularly with the pure uniform silvery whiteness of the whole head and body. The second dorsal fin, though very small, is sufficiently distinct in this species, and possibly has been merely overlooked or mistaken in imperfectly preserved specimens of others for an accidentally detached portion of the first dorsal fin. The proportions, not only of the depth, but of the head, eye, muzzle and thickness, differ notably from those assigned by MM. Cuvier and Valenciennes to their *P. oculata*, of which it wants besides the dorsal fin-spot. The ventral and caudal fins are also longer. It agrees in these and other points far better with *P. trichopterus*, *P. Carolinus*, or *P. guttatus* (*Coryphæna velifera*, Pallas) of these authors, but differs from them still more widely than it does from *P. oculata*, in the numbers of the fin-rays.

ASTRODERMA PLUMBEUM.

The Madeiran *Astroderma* recorded under the name of *A. coryphænoides*, Bon. (Proceed. Zool. Soc. 1840, p. 37; Trans. iii. p. 7),

is probably a distinct and undescribed species. It differs from MM. Cuvier and Valenciennes' description of the Mediterranean fish, and from that by Risso of the same, under the name of *Diana semilunata*, in size, being only four instead of twelve or fifteen inches long; in proportions, the depth being contained three instead of not quite four times in the length, making it a deeper fish, and the length of the head equalling the depth; in having the eye exactly in, not partly before and altogether below the middle of the head, and the hinder nostril larger than the foremost; in the less height backwards of the dorsal and anal fins, and their nearer approach at their hinder ends to the root of the caudal fin. The pectoral fins are longer, and the ventral fins, instead of being very short, with the first spine strong and serrate, are half the length of the whole fish, with the first ray or spine feeble, weak, or slender, and perfectly even or entire; the other rays, especially the first, being produced into fine hair-like points. The scales are firmly fixed, not easily removeable. There is no trace of the two little oblique crests or ridges at the base of the caudal fin on each side the faint central keel, like those which the Mackerels have; and lastly, the pectoral and caudal fins, instead of a fine coral-red, are pale tawny or dirty yellowish white; the body being a dull silvery lead-colour, instead of silvery rose.

It were not safe, from inspection of a single individual of such small size, and in a genus hitherto consisting of a single species, to pronounce these characters of actual specific value; some, or perhaps all, may be due merely to age or sex. The name of *A. plumbeum* is therefore here proposed only provisionally for the Madeiran fish.

Ausonia Cuvieri, Risso, Hist. iii. 342. f. 28; Cuv. Règ. Anim. ii. 214, note.

Luvarus imperialis, (Raf.) Cuv. Règ. Anim. ii. 214; Cuv. et Val. ix. 412.

I shall take an early opportunity in 'The Fishes of Madeira' of furnishing a full account, with a figure from a fresh and perfect individual, of this little known, most rare, and interesting fish. The several discrepancies between my example, which is deposited in the Society's collection, and the former individuals on record, seem fairly attributable to the paucity of those before examined, or to imperfect means of observation. The Madeiran fish differs not more from each of those included in the above references than they do respectively from one another, whilst it presents an assemblage of characters only to be collected from them all.

This really fine and striking fish offers no ambiguities whatever of affinity, the very fishermen regarding it as some kind of "Dourado" (*Coryphæna*), which it resembles, both in general aspect and in the form of the head and profile. Something about the mouth and profile reminds one also of the turbot, whilst in the shape of the body, and perhaps of the dorsal and the anal fins, it resembles the "Enxareo" (*Caranx luna*, Geoffr.). The colour of the fins recalls to mind the *Lampris*.

The length of this example was five-eighths of an inch less than three feet.

Fam. ZENIDÆ, nob.

ZEUS ROSEUS. *Z. roseus immaculatus inermis*: pinna antica anali nulla, dorsali haud filamentosa; pinnis ventralibus amplis triangulari-ovatis.

D. 8 + 27 v. 28; A. 1 v. 2 + 29; P. 14; V. 9; C. $\frac{5+VI.}{5+V.}$ v. $\frac{4+V.}{5+VI.}$; M. B. 7 v. 8.

Two examples of this very handsome and most distinct new species of Dory have occurred. There is no danger of confounding it with any other of the genus yet recorded, for the *Z. Childrenii* of Bowdich, so obscurely indicated in the 'Excursions in Madeira,' was most probably the Boar-fish (*Capros Aper*, Lac.).

Sternoptyx diaphana (Herm.), Cuv. R. An. ii. 316. t. xiii. f. 1.

The acquisition lately of an example of this most rare and curious of fishes has confirmed a suspicion I have long entertained, that the true position of its genus is near *Zeus*. It has also some relation to *Trachichthys*, but I think only in the way of analogy.

This little fish was taken in August at sea, between Madeira and St. Mary's, the southernmost of the Azores, about eighty miles to the south-east of the latter island, in a calm smooth sea. It is not a little remarkable, that after so long an interval, *Sternoptyx diaphana*, originally discovered by Hermann so long ago as 1774, in the West India islands, should have been rediscovered thus near the Azores; that is, in the locality in which the cognate *St. Olfersii*, Cuv. l. c. t. xiii. f. 2, has yet alone been found.

Fam. CAPROIDÆ, nob.

Gen. ANTIGONIA, nob.

Char. Gen.—*Corpus* compressum rhombiforme, altitudine longitudinem subæquante. *Os* parvum haud protractile; dentibus conicis minutis. *Caput* asperum; genis operculoque squamosis. *Præoperculum interoperculumque* limbo denticulato nudo. *Oculi* magni, circulatim cristato-carinati, cristis denticulatis. *Squamæ* asperæ, pectinato-ciliatæ.

Pinna dorsalis unica, continua, ad angulum superiorem corporis nascens, antice alta; *anal*is parte anteriore spinosa a posteriore sinu distincta: spinis utriusque striatis, squamosis; *pinnæ ventrales* majusculæ, ad angulum inferiorem corporis sitæ. *Pinna caudalis* simplex, truncata. *Membrana branchiostega* septem-radiata.

Obs.—Species adhuc unica, Maderensi-Atlantica, rarissima parvula rubescens Caproidea. Pinnarum spinæ validæ, striatæ, squamulis imbricatis vestitæ, membrana nuda. Capite armato s. præoperculo interoperculoque cristisque ossium omnibus denticulatis, dentibusque brevibus conicis scobinatis, squamisque asperis ciliatis, ad Percidas per *Enoplosum* Lac. dum tendit, a Chætodontibus (e. g. *Platax*, *Drepane*) Coryphænidisque (e. g. *Peprilus*, *Apolectus*), quibus forma aspectuque simillima, recedit. Iisdem characteribus,

necnon cauda lineaque laterali simplicibus, spinisque ante pinnas verticales liberis nullis, Scombridis (e. g. *Blepharis*, *Gallichthys*, *Argyreiosis*, *Vomer*, *Hynnus*), forma similibus, magis ac magis distat. Pluribus quinetiam notis *Equulam* ac *Gerrem*, e. g. *Gerrem Plumieri* Cuv. et Val. t. 167, revocat in mentem. A *Capro* Lac. forma, ore vix protractili, pinnaque dorsali unica continua antice alta differt.

ANTIGONIA CAPROS.

D. 8 + 34; A. 3 + 33; P. 14; V. 1 + 5; C. $\frac{4+I+\overline{V}}{3+I+IV}$; M. B. 7.

A single individual only of this most curious and interesting little fish has yet appeared. It forms a most distinct genus, throwing considerable light on the affinities of several other genera, which, before its discovery, had been placed very much at random.

Fam. MUGILIDÆ.

Mugil Cephalus, L. Cuv. et Val. xi. t. 307.

I procured three or four examples of this species by dragging with a net at the mouth of the Machico river. They were all caught in perfectly fresh water, in a place which was quite cut off from all communication with the sea, except in the time of winter-floods or particularly high tides. The species was quite unknown to the fishermen.

Mugil auratus, Risso.

M. chelo, Syn. 184; nec aliorum.

M. Maderensis, Suppl. in Proceed. 1839, p. 82; Trans. iii. p. 8.

The usual exposure of the ends of the maxillary in the Madeiran fish prevented an earlier recognition of its proper name and synonym. They are only occasionally, and, except in full-sized fishes, rarely,—not generally or characteristically, as must be inferred from MM. Cuvier and Valenciennes' account of the species,—“entièrement cachés,” although their figure represents them more correctly partially exposed.

Fam. GOBIDÆ.

Blennius parvicornis of my Suppl. (Proceed. 1839, p. 83; Trans. iii. p. 9), but not of MM. Cuvier and Valenciennes, proves to be a mere variety, or perhaps monstrous state, with a notched dorsal fin, of the common *Bl. palmicornis*, Cuv. and Val. It is *Bl. palmicornis*, var. γ *strigata*, nob. Another var. (β *sinuata*, nob.) of the same species has the dorsal fin merely faintly sinuate, instead of notched like var. γ , in the middle. As for the true *Bl. parvicornis* of Cuvier and Valenciennes, which, having the dorsal fin even*, cannot be referred correctly to either of these states of the species, I feel authorized, after examination of perhaps some hundred individuals of this common little fish, with a particular view towards the confirmation of the form in question as a species, to pronounce it a mere trivial and accidental aberration (so far at least as concerns the Madeiran

* “Sa dorsale est continue.” Cuv. et Val. xi. 258.

individual alluded to by MM. Cuvier and Valenciennes) of the typical common state (var. a) of *Bl. palmicornis*.

PHOLIS TRIGLOIDES.

Pholis lævis, Syn. 185 ; Suppl. in Proceed. 1839, p. 83 ; in Trans. iii. 9.

This fish proves to be distinct specifically from the British *P. lævis*, Fl., of which I had considered it at first a mere variety. This correction has been recently confirmed, on a comparison of specimens, by my friend Mr. Jenyns, who finds the eyes in the Madeiran fish "more than twice the size of those of *P. lævis*, Fl., not to mention other differences." I am also so far satisfied as anything short of an inspection of their specimens can warrant, that *Bl. trigloides* of MM. Cuvier and Valenciennes, which even by their own showing* is misplaced in their genus *Blennius*, is founded, at least in part†, on an example of this species, for which I therefore now propose the name of *Pholis trigloides*, it being a genuine member of the genus *Pholis* of Fleming.

PHOLIS BUFO. *P. fusco-nigrescens, versicolor, mox pallide cervina, nigro maculata et punctata, magna, pigra: pinnis pectoralibus nigro maculatis, maculis transverse fasciatis: capite magno, crasso, obtuso; oculis nec magnis, nec extantibus, intervallo occipitali lato subsulcato: dentibus anticis abrupte et longissime productis, arcuato-incurvis.*

D. 12 + 19 v. 18; A. 20 v. 21; P. 13; V. 3; C. $\frac{2 + \overline{\text{I.} + \text{V.}}}{2 + \overline{\text{I.} + \text{IV.}}}$; M. B. 6.

This ugly, heavy-looking fish attains the length of ten or twelve inches, and is at present certainly the giant of its genus, and even of the true Blennies. It is very rare, or rather local, and confined apparently to beaches covered with large rounded rocks or stones, amidst which a little fresh water finds its way into the sea. I have had from ten to twenty individuals, from two inches and a half in length upwards, all exhibiting the same characters.

Fam. LABRIDÆ.

Proceed. Zool. Soc. 1839, p. 84, *Erratum*. The two lowest paragraphs at the bottom of this page belong to the head "*Acantholabrus imbricatus*;" the specific character and fin-formula of which have been transposed, by an error in the printing, from their proper place immediately before the first of these two paragraphs, beginning "*Crenilabrus luscus*," to p. 86, where they will be found forming in Italics the second paragraph from the top.

Fam. ESOCIDÆ.

Gen. ECHIOSTOMA, nob.

Char. Gen.—*Corpus* elongatum anguilliforme nudum. *Caput* ser-

* "Il n'y a point de tentacule au sourcil." Cuv. et Val. xi. 228.

† See Suppl. in Proceed., p. 83 ; Trans. iii. p. 9.

pentiforme, oculis magnis, rostro brevissimo obtuso, rictu magno longe diducto, mandibulæ inferioris symphysi barbiferæ. *Dentes* conferti numerosi aciculares recurvi inæquales, quibusdam prælongis; intermaxillaribus vomere palatinis linguaque armatis. *Apertura branchialis* ampla. *Opercula* plana simplicia inermia. *Pinnæ pectorales* jugulares rudimentales pauci-radiatæ (s. quadri-radiatæ), prima superiore distincta (in filamentum longissime producta), tribus inferioribus brevibus membrana subcoalitis: *ventrales* abdominales (ad medium corporis sitæ octo-radiatæ): *dosarli anali*que parvis oppositis posticis, *caudali* parvo lunato-furcato subrudimentali approximatis.

ECHIOSTOMA BARBATUM.

D. 15; A. 18; P. 1 + 3; V. 8; C. $\frac{5+V}{5+VII}$.

Stomias barbatus, Cuv. R. An. ii. 283, 284?

This is very probably the fish briefly noticed by Cuvier under the above synonym. But it seems, at all events, sufficiently distinct generically from the *Esox* or *Stomias Boa* of Risso (Hist. iii. 440. f. 40), with which Cuvier associates it; but which, besides having other differences indicative of generic distinction, is figured by Risso as covered with large scales, like a *Microstoma* or *Chauliodus*. Nor can I find any trace of the Madeiran fish in Risso*, or in any other work to which I have access. It may therefore be considered one of no less rarity than singularity of characters and aspect; linking the *Esocidæ* with the *Muraenidæ*, and indeed partaking more of the habit, form and colouring of the latter tribe than of the former.

A single example only has been taken in a net close in shore, measuring thirteen inches and a quarter long. It was wholly devoid of silver spots, but had two rather conspicuous rows of pale pore-like dots low down on the sides, and a most singular rose-coloured, pear-shaped spot, placed obliquely beneath and a little behind the eye, at the bottom of the cheek. This soon faded to white in spirits. The whole body was an uniform dark chocolate-brown, punctate with black dots disposed in bands or figures. The single beard is thick or broad and subcartilaginous, equalling in length the depth of the head. The opercles are of the usual strength and structure.

Fam. SALMONIDÆ.

Gen. AULOPUS, Cuv.

Saurus Lacerta (Risso), Syn. p. 188, is certainly an *Aulopus*; and notwithstanding the larger number (15–17) of its branchial rays, is also probably the *A. filamentosus* of Cuvier (Règ. An. xi. 315). The reference to Risso is in such case perfectly correct; but the name, of course, must sink into a synonym, the fish being generically quite distinct enough from *Saurus*, Cuv.

* Cuvier speaks of his *Stomias barbatus* being equally with *Stomias Boa* a discovery of M. Risso's; but I can find no trace of the former fish in his 'Histoire,' or, as Cuvier cites it, the second edition of his 'Ichthyology.'

Gen. SAURUS, Cuv.

I possess the head of a third Madeiran Saurine fish, belonging truly to the genus *Saurus*, and not to *Aulopus*; but the body having been destroyed, I must decline for the present attempting either to identify or to define it. It was of a mottled pale and scarlet colour, varied with brown or dusky, and had a distinct dark spot above at the tip of the muzzle.

Gen. METOPIAS, nob.

I place here, as in some degree related to *Scopelus*, but merely provisionally, conceiving that further investigations may authorize its being formed into a new family, a most curious little fish, which I saw caught in a boat-scoop whilst swimming on the surface, about a league and a half from shore, on a hot calm day in September 1841. Although full-grown or adult, being in roe, it was only an inch and a half long, and was nearly altogether black.

With reference to its affinities and position in the Cuvieran system, let it be observed, that—

1st, it is decidedly Malacopterygious, and this without apparent affinity in other points to any known Acanthopterygious genus. If it recalls to mind in some respects *Pomatomus*, it altogether stands aloof in scales, dentition, single dorsal fin, small eyes, &c. from that genus. The fins resemble most those of a *Cyprinus*.

2ndly, the ventral fins are not abdominal, but thoracic, which at once opposes its insertion amongst *Cyprinidæ*, *Esocidæ*, *Salmonidæ*, and *Clupeidæ* of Cuvier. In *Aulopus*, Cuv., indeed, the ventral fins are subthoracic, and there are other points about *Metopias* indicating rather close alliance of some kind with *Scopelus*; but it has certainly no immediate natural affinity with the true *Salmonidæ*, or even with *Sauridæ*, either in scales, dentition, fins, or habit. It is also quite destitute of the artificial symbol of these families, having no trace of a second rudimentary or adipose dorsal fin.

3rdly, it differs *toto celo* from *Gadidæ*; agreeing only with the rare *Mora Mediterranea*, Risso, in the thick cube-shaped head and short abrupt muzzle. The ventral fins, moreover, are thoracic, not jugular; and I could find no trace of a beard or barbule.

These considerations seem to point to the propriety of regarding *Metopias* as belonging to a new family or tribe of Thoracic Malacopterygians, ranging between *Salmonidæ* and *Gadidæ*; still it is very possible that a discovery of some yet unknown link with old-established groups may solve at once, as in the case of *Brama longipinnis* and *Taractes*, the problem of its true position. The following characters will serve meantime for its discrimination, whether they prove eventually of mere generic or still higher value.

Gen. METOPIAS.

Pinnae malacopterygiæ; *ventrales* thoraciæ: *pinna dorsalis* unica; *adiposa* nulla; *caudalis* bifida. *Squamæ* parvæ læves (cycloideæ). *Dentes* minuti uniseriati; *palatinis* linguaque vomereque inermibus.

Caput magnum subcubicum nudum, fronte abrupto declivi, rostro brevi lato emarginato, rictu oblique ascendente, mandibula inferiore longiore: oculi minuti. *Opercula* integra cum toto capite inermia.

Corpus antice crassum, postice compressum; cum capite clavæforme.

Pinnæ omnes amplæ, nudæ.

METOPIAS TYPHLOPS.

D. 4 + 14; A. 4 + 7; P. 15; V. 1 + 7; C. $\frac{3 \text{ v. } 4 + \overline{\text{I.} + \text{IX.}}}{3 \text{ v. } 4 + \text{I.} + \text{VIII.}}$.

Piscis admodum pusillus, nigricans, capite longitudinaliter exilissime striato. *Radii* quatuor primi dorsales et anales cum primo ventrali simplices, sed minime spinosi; ceteris furcatis vel ramosis.

Fam. CLUPEIDÆ.

CLUPEA LATICOSTA.—“*Arenque a casta larga.*” *C. edentula elliptica, lateribus latis planis, dorso abdomineque aequaliter convexis; operculis suborbitariisque obsolete striatis, illis intus gulaque nigris: squamis lunatis, linea laterali obsoleta s. nulla; pinna dorsali centrali, anali subelongata, caudali lobis gracilibus angustis, pectoralibus operculo subremotis.*

D. 3 + 15; A. 18 + 2; P. 1 + 15; V. 1 + 7; C. $\frac{4 \text{ v. } 5 + \overline{\text{I.} + \text{IX.}}}{5 + \text{I.} + \text{VIII.}}$;
M. B. 6 utrinque.

I had long since seen, and have often heard of this deep-sided, larger sort of Madeiran Herring, or “*Arenque*,” from the fishermen, but only recently obtained an opportunity of examining it, and of discovering it to be a new species, nearest to the Pilchard; but differing chiefly in its greater size, greater depth, approaching that of *C. Leachii*, Yarr., six, not eight-rayed branchial membrane, and in the production of the last two rays of the anal fin. Like the Pilchard, it has the dorsal fin in the centre of gravity, and the subopercle cut square at the bottom.

Fam. GADIDÆ.

Merlucius vulgaris, Cuv.

The remarks upon the Madeiran Hake (*Merlucius vulgaris*, Syn. p. 189) at pp. 37 and 38 of my Supplement (Proceed. Zool. Soc. 1840; Trans. iii. p. 15), and the idea of its distinctness as a species from the common British or Northern Hake, arose from tracing in the form of the dorsal and anal fins in the Madeiran fish, and in Salviani's figure of the Mediterranean Hake, a very appreciable difference from my friend Mr. Yarrell's representation of the British Hake at p. 177 of the second volume of the first edition of his ‘*Fishes*.’ Having requested his attention to the subject, I learn, however, from the corresponding chapter of his second edition, that this difference is either inconstant or attributable to a fault in the

former figure; and he has furnished a new engraving of the British Hake, which leaves no doubt of its identity with the Madeiran fish, according to my first determination in the 'Synopsis of the Fishes of Madeira.' No variation in the form of the fins, it may be added, has yet been observed in the Madeiran Hake.

Mora Mediterranea, Risso, Hist. iii. 224.

Fishing at a depth of three or four hundred fathoms off Magdalena, five leagues to the west of Funchal, I was fortunate enough last summer (1841) to obtain many examples of both sexes of this very rare, and, even in Madeira, almost unknown fish, which Cuvier has wholly omitted in the 'Règne Animal.' It forms a very distinct genus of *Gadidæ*; in shape and colours resembling *Phycis Mediterraneus*, but in the large thick subcubic head, abrupt short muzzle and large scales, recalling to mind a pale-coloured *Pomatomus telescopus*. At Magdalena this last-named fish is called "Pimentelle," whilst its common Funchal name, "Ribaldo," is assigned to *Mora Mediterranea*.

Gen. GADELLA, nob.

Char. Gen.—*Corpus* subellipticum, postice valde attenuatum compressum: capite nuchaque superne latis planis: rostro obtuso, rictu amplo largo, ore lato transverso, maxillis æqualibus dentibus subscobinatis, quibusdam magnis uncinatis distantibus interspersis, vomere palatinis linguaque lævibus inermibus: barbula nulla.

Pinna dorsalis analisque unica conformis continua æqualis a nucha vel ano usque ad pinnæ caudalis basin protensa, antice angustissima, postice latior: dorsali prima plane nulla. *Pinnæ pectorales* lanceolato-acuminatæ, tenues nec carnosæ: *ventrales* jugulares parvæ pluri-radiatæ, radiis primis duobus in filamenta productis. *Pinna caudalis* elongato-lanceolata.

Obs. Piscis pusillus, cinereo-fuscus, Motelliformis, oculis magnis, membrana branchiostega septem-radiata.

GADELLA GRACILIS.

D. fere 60; A. fere 60; P. 24; V. 7; C. XXV. fere; M. B. 7.

This new type approaches *Motella*, *Raniceps*, and *Brosmius*; differing from the two former in the entire absence of a nuchal groove, or of any rudiment of a first dorsal fin; and from them all in the absence of barbule, and in the shape and delicate (not fleshy) nature of the pectoral fins. A single example only has occurred, measuring four inches and one-eighth in length.

Fam. MACROURIDÆ, nob.

MACROURUS SERRATUS. *M. pallide cinereo-fuscus, scaber, squamis pectinato-striatis, inermibus, ecurinatis: capite rostroque brevibus, simplicibus (nec cælatis nec carinatis); oculis rotundatis; dentibus scobinatis: pinnæ dorsalis primæ altæ radio primo valido, antice spinoso-serrato; ventralium in filamentum productis.*

1^{ma} D. 1 + 9; 2^{da} D. 100 fere; A. 80-90; V. 1 + 7 v. 8; P. 19 M. B. 7.

Cuvier, in a note at p. 337 of the 'Règne Animal,' vol.ii, affirms, from "an immediate comparison," the identity of Risso's *Lepidoleprus cælorhynchus* of the Mediterranean with the *Macrourus rupestris* of Bloch, which is described and figured by that author with the first ray of the first dorsal fin distinctly serrated in front. Yet Dr. Richardson, in the Proceedings of the Zoological Society for 1839, p. 100, speaks of "examples of *cælorhynchus* from the Mediterranean and also from Madeira"—meaning, by these latter, my *Macrourus atlanticus*, Proceed. Zool. Soc. 1839, p. 88; Trans.iii. p. 15—"both in the Society's Museum, none" of which "have the first dorsal ray serrated."

Awaiting, therefore, further definitive information regarding the true *L. cælorhynchus* of Risso, in reference to this character, I am compelled to give a distinct name to this second Madeiran species of *Macrourus*, which has the dorsal spine serrated at its fore-edge, but which, by its shorter muzzle and somewhat smaller and rounder eyes, appears, waving the question as to the serrature or non-serrature of the dorsal spine in Risso's fish, to approach even nearer than *M. atlanticus* to his *L. cælorhynchus*.

A single example only has occurred, which was not seen till it had been partly dried.

MACROURUS LÆVIS. *M. pallidus, griseus, lucidus, lævigatus s. exilissime areolato-scaber, inermis; squamis inconspicuis minutis: capite rostroque acuto abbreviatis, simplicibus (nec cælatis nec carinatis); oculis rotundatis; dentibus in maxilla inferiore validis, uniseriatis: pinne dorsalis primæ radio primo inermi; ventralium simplicis.*

1^{ma} D. 1 + 9; 2^{da} D. et A. ∞; P. 15; V. 1 + 7; M. B. 7.

This third Madeiran species of *Macrourus* is immediately distinguishable from the other two by its glossy, sleek or apparently naked appearance, caused by the fineness and minuteness of its areolæ or scales. It is also a more elongated fish. In the formation and proportions of the head, eyes and muzzle it nearly agrees with *M. serratus*, and it has also the cheeks plain and flat, without the strong sculptured subocular keel which gives so singular and trigloid an aspect to the head of *M. atlanticus*.

The only individual which has occurred was sixteen inches long.

Fam. OPHIDIIDÆ.

Gen. DIAPHASIA, nob. (*Les Fierasfers*, Cuvier.)

Diaphasia acus.

Ophidium fierasfer, Risso, iii. 212. No. 99.

Les Fierasfers (*Ophidium imberbe*, L.), Cuv. Règ. Anim. ii. 359.

The occurrence in Madeira of a single individual, imposes the necessity of proposing, in lieu of the barbarous vernacular appellation *Fierasfer*, a name founded on an obvious character, and accordant with the rules of scientific nomenclature.

Fam. DIODONTIDÆ.

Diodon reticulatus, L. Syn. p. 193.—*Erratum*. Expunge in the synonymys, “Le Diodon orbe *Lacepède*”; and for “*Diodon rivulatus*,” read *Diodon tigrinus*.

Fam. SQUALIDÆ.

Carcharias falcipinnis, Proc. Zool. Soc. 1839, p. 90; Trans. iii. p. 18.

This proves, as it was suspected, to be the *Squalus ustus*, Dum.; that is, *Carcharias* (*Prionodon*) *melanopterus* (Q. et G.) of MM. Müller and Henle.

Carcharias microps, Proc. Zool. Soc. 1840, p. 38; Trans. iii. p. 18.

This again may perhaps be found to be identical with the imperfectly known *Squalus obscurus*, Lesueur (*Carcharias* (*Prionodon*) *obscurus*, Müll. et Henle), concerning which, however, the information hitherto afforded is too scanty to allow the immediate adoption of the name. *Carcharias microps* differs from *C. P. Sorrah*, Val., as described and figured by MM. Müller and Henle, in the equiserrate teeth, the longer and narrower pectoral fins, the smaller eyes and shorter muzzle. It differs again from *C. P. Henlei* (Val.), Müll. et Henle, in the long and black-tipped pectoral fins.

Fam. CENTRINIDÆ.

CENTROPHORUS CALCEUS.—“*Sapata*.”

Acanthidium calceus, Proc. Zool. Soc. 1839, p. 92; Trans. iii. p. 19.

Although I have not yet succeeded in obtaining the male of this Shark, I perfectly concur in MM. Müller and Henle’s suggestion (Plag. 2^{ter} Nachtr. p. 199), that it will probably prove to belong to their genus *Centrophorus*, with which I was unacquainted at the time of its former publication. It is however quite distinct from either of the species they describe.

The other little shark, *Acanthidium pusillum*, nob., with which at that time, in expectation of MM. Müller and Henle’s work, I preferred associating it, though not without considerable scruple, to forming a new genus for a single species, is I think distinct specifically from *Spinax niger* (Buon.) of these authors (*Sq. Spinax*, L., *Acanthidium Spinax*, nob.), with which they* have supposed it identical. It must retain also the name which I have given it; that of *Spinax*, which MM. Müller and Henle, after the Prince of Canino, have assigned to the same combination of characters, belonging, by the right of priority†, to the distinct generic group to which these authors have assigned the name already otherwise or in a wider sense employed by Risso, of *Acanthias*, and the type of which is the *Squalus Acanthias*, L.

Fam. RAIIDÆ.

TORPEDO PICTA. *T. supra purpureo-fusca (sepiolina) maculis albidis reticulato-marmorata: corpore latiore quam longo, cauda abbreviata multo longiore; pinna caudali altiore quam longa; ventralibus amplis, dimidio caudæ longioribus: spiraculis septem-dentatis.*

* 2^{ter} Nachtr. p. 199.

† Cuv. Règ. Anim. ii. 391, 392

Torpedo marmorata, Syn. Mad. Fish. p. 195 ; nec Risso, nec aliorum.

The closer analysis which, since the publication of the Madeiran fish under the name of *T. marmorata*, Risso, this genus has received from MM. Müller and Henle, authorizes the proposal of it as a distinct and seemingly new species. It agrees with *T. marmorata* in the shape and relative proportions of the body-disc, the tail and caudal fin ; but the distance from the root of the ventral fins to their free hinder edge considerably exceeds the distance from their hinder edge to that of the caudal fin ; the teeth of the spiracles are not less developed in full-grown fishes of a foot and a half in length than in younger examples ; and lastly, the colours are liable to no variation, and are very different from those of any of the varieties of *T. marmorata* enumerated by MM. Müller and Henle. I regret I am unable at the present moment to compare the dentition with that of *T. panthera* (Ehr.), Müll. und Henle, Nachtr. p. 193.

Torpedo hebetans, Syn. p. 195 (*Raia hebetans*, Müll. und Henle, Nachtr. p. 194), in the remarkable notch on each side at the outer extremity of the front margins, most resembles *T. nobiliana* (Buon.), Müll. und Henle, p. 128. The disc of the body however was an inch broader than long, and the colours were too different in the only example (a male) which has yet occurred of the Madeiran fish to allow, without more evidence, its junction with this or any other Mediterranean species.

Raia Maderensis, Syn. p. 195. I am not quite prepared to acquiesce in MM. Müller and Henle's reference of this to *R. undulata* or *mosaica*, Auct. (See Müll. und Henle, p. 134, and Nachtr. p. 194.) The Madeiran fish is generally more or less completely rough beneath, and always coarsely shagreened *all over* on the upper surface. However, this discrepancy with their account of *R. undulata* might be due to the small size of their specimens ; but there is also still some further disagreement with regard to the large prickles in the middle of the back ; and the colours, which are constant in the Madeiran fish, agree only with their var. 3.

Raia oxyrhynchus (Will.), Suppl. Mad. Fish. p. 92 (see Müll. und Henle, 2^{ter} Nachtr. p. 200) is truly the *R. oxyrhynchus*, Linn., of Müller and Henle, p. 148, as distinguished from the nearly allied *R. lintea* of Fries.

PTEROPLATEA HIRUNDO. *P. glabra, supra unicolor hepatica, rostro vix prominulo, pinnis pectoralibus margine anteriore utrinque convexo, dein apices versus concaviusculo, corpore (postice convexo) plus duplo latiore quam longo, cauda brevissima dimidio corporis brevior, subtus linea elevata carinata, supra simplici, apicem versus quadrangularem : tentaculis pone spiracula nullis.*

Trygon altavela, Suppl. in Proceed., p. 92 ; in Trans. iii. p. 20 ; omisso synonym. Cf. Müll. und Henle, 2^{ter} Nachtr. p. 200.

Judging from MM. Müller and Henle's account of the species of this genus, the Madeiran fish is not only distinct from the Mediterranean *περυπλάτεια* of F. Columna, to which I formerly referred it, but from every other. It differs from *Pt. altavela*, Müll. und Henle,

in the uniformity of colour of the body and tail above ; in having the fore margin of the wings convex ; in their greater width from point to point ; in the tail being simple, or without any trace of fin, raised line, or keel, above ; and lastly, in the absence of any kind of tentacle behind the spiracles. In the second and last of these characters it approaches much more nearly the American *Pt. machura*, Müll. und Henle, but differs in smoothness when adult, in colour, greater width of body, and in the tail being sharp-edged or fin-carinate beneath. From the Indian *Pt. micrura*, Müll. und Henle, it is abundantly distinct.